

IN THE UNITED STATES

PATENT AND TRADEMARK OFFICE

APPLICANTS: Eric C. Anderson *et al.*
APPLICATION NO.: REISSUE OF USPN 5,867,214
FILING DATE: Herewith
TITLE: APPARATUS AND METHOD FOR INCREASING A DIGITAL CAMERA IMAGE
CAPTURE RATE BY DELAYING IMAGE PROCESSING
EXAMINER: UNKNOWN
GROUP ART UNIT: UNKNOWN
ATTY. DKT. NO.: 18602-05753

BOX REISSUE
COMMISSIONER FOR PATENTS
WASHINGTON, DC 20231

EXPRESS MAIL No. EL541495327US

**PRELIMINARY AMENDMENT AND
STATUS OF CLAIMS AND SUPPORT FOR CLAIM CHANGES
UNDER 37 CFR § 1.173(c)**

SIR:

Prior to examination of the subject reissue patent application, please amend the following claim:

16. (amended) An apparatus for increasing [a digital camera] image capture rate, comprising:
- an imaging device for generating raw image data responsive to an image capture request;
 - a memory buffer for initially storing the raw image data;
 - first routines for conveying the initially stored raw image data away from the [frame] memory buffer to a second memory location to provide space for storing additional, subsequently captured images, wherein the raw image data is stored in uncompressed form in the second memory location;
 - second routines for processing said raw image data and for storing said processed image data; and

a central processing unit coupled to the imaging device and to the memory buffer, for executing according to a predetermined set of priorities the first and second routines; wherein the first routines are assigned priority over the second routines to thereby facilitate the rapid conveyance of raw image data away from the frame buffer.

Please add the following new claims:

19. An apparatus for increasing image capture rate, comprising:
an imaging device for generating raw image data responsive to an image capture request,
and further for storing the raw image data in a memory buffer; and
a central processing unit coupled to the imaging device and the memory buffer, for
transferring the raw image data to a second memory, processing the raw image data
and storing the processed image data in the memory buffer, and for executing the
generating, storing, transferring, and processing of the raw image data according to a
predetermined set of priorities.
20. The method of claim 1 wherein the memory device is a flash memory.
21. The method of claim 1 wherein the memory device is comprised of a first memory device
and a second memory device and at least one of either the first memory device or the second
memory device is a flash memory.
22. The apparatus of claim 6 wherein the memory device is a flash memory.
23. The apparatus of claim 6 wherein the memory device is comprised of a first memory
device and a second memory device and at least one of either the first memory device or the
second memory device is a flash memory.
24. An apparatus for increasing a digital camera capture rate comprising:

a first spooler routine which moves raw image data out of a frame buffer, the first spooler routine having a highest priority;
a processing/compression routine which compresses raw image data, the processing/compression routine having a middle priority;
a second spooler routine which moves compressed image data to flash memory, the second spooler routine having a lowest priority; and
a processor for executing the routines according to their priority and according to available processor time.

25. The apparatus of claim 24, wherein the first spooler routine moves raw image data into a first memory, the apparatus further comprising:

a third spooler routine which moves raw image data out of the first memory, the third spooler routine having a priority between that of the first spooler routine and that of the processing/compression routine.

26. The apparatus of claim 24, wherein the second spooler routine moves compressed image data out of a first memory, the apparatus further comprising:

a third spooler routine which moves compressed image data to the first memory, the third spooler routine having a priority between that of the processing/compression routine and that of the second spooler routine.

27. A method for increasing a digital camera capture rate comprising the steps of:

transferring raw image data out of a frame buffer;
processing and compressing raw image data if either
the transferring raw image data step is complete or
processor time is available during the transferring raw image data step; and
transferring compressed image data to flash memory if either
the processing and compressing step is complete or
processor time is available during the processing and compressing step.

28. An apparatus for increasing image capture rate comprising:

A raw-image input coupled to a raw-image storage, the raw-image input for capturing a raw image and storing it in the raw image storage;

A processor that

- compresses a raw image only when either
the raw-image input is no longer capturing and storing raw images, or
processor time becomes available; and
- pauses the compression of raw images if the raw image input begins to capture new raw images, and resumes compressing raw images when either
the raw-image input is no longer capturing and storing raw images, or
processor time becomes available.

29. The apparatus of claim 28 wherein the raw-image storage comprises a first storage device and a second storage device.

30. The apparatus of claim 29 wherein at least one of either the first storage device or the second storage device is a flash memory.

31. The apparatus of claim 16 wherein the central processing unit and imaging device are both embedded in a single physical apparatus.

32. The apparatus of claim 16 wherein the central processing unit is physically embedded in a personal computer to which the imaging device is communicatively coupled.

33. The apparatus of claim 28 wherein the processor and raw image input are both embedded in a single physical apparatus.

34. The apparatus of claim 28 wherein the processor is physically embedded in a personal computer to which the raw image input is communicatively coupled.

STATUS OF CLAIMS AND SUPPORT FOR CLAIM CHANGES

Original claims 1-18 are in the patent as issued and new claims 19-34 are pending.

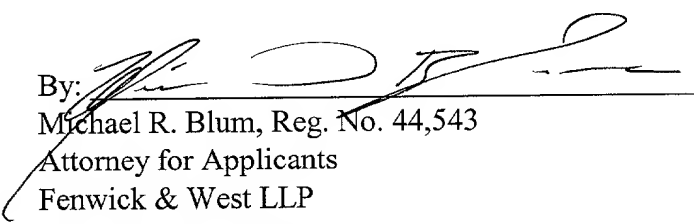
Support for the claimed subject matter is found for example in the original specification

at:

Column	Lines
2	1-26
3	1-11, 60-64
4	18-20, 21-35, 46-51
5	60-67
6	65-67
7	1-26, 33-36

Respectfully submitted,
ERIC C. ANDERSON *et al.*

Dated: February 2, 2001

By: 
Michael R. Blum, Reg. No. 44,543
Attorney for Applicants
Fenwick & West LLP
Two Palo Alto Square
Palo Alto, CA 94306
Tel.: (415) 875-2468
Fax: (415) 281-1350